

REMARKS

Claims 1-17, 19-29 and 34-63 are pending. Claims 1-17, 19-29 and 34-63 stand rejected. Claims 1, 35 and 52 have been amended. In view of the amendments to the claims and the following remarks, Applicants respectfully request that the rejections be withdrawn and that the claims be allowed.

Claims 1-17, 19-29 and 34-63 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.K. Patent Application No. GB 2352512 to Ciesla et al. ("Ciesla") in view of U.S. Patent Application Publication No. 2003/0178584 to Arnone et al. ("Arnone"). The rejection is respectfully traversed.

Claim 1 is directed towards an imaging system for examining an object, the system including a probe array and a scanning mechanism. The probe array includes "at least one emitter of THz radiation and a plurality of photoconductive detectors for detecting radiation. A beam of radiation is emitted by the at least one emitter and directed to the object and reflected back from the object to at least two of the plurality of detectors. The scanning mechanism rotates or moves the probe array such that the beam of emitted radiation is scanned across the object and reflected back to the at least two of the plurality of detectors. As explained below, neither Ciesla nor Arnone, alone or in combination, teach each limitation of claim 1.

Ciesla relates to a probe assembly for examining a sample. Ciesla, Abstract. The Ciesla probe assembly includes an emitter and a plurality of detectors. Ciesla, fig. 11. However, Ciesla is silent regarding a scanning mechanism "configured to rotate or move said probe array such that a beam of the emitted radiation is scanned across the object, and reflected back to said at least two of the plurality of detectors." Ciesla fails to disclose any type of mechanism that would move either the probe array or the object during a scan so as to allow a scanning across the object.

The Examiner asserts that Ciesla does teach the scanning of multiple regions of an object, and that this implies that Ciesla must include means for moving either the probe array or the object during scanning. Office Action, p. 2. However, the multiple regions of an object scanned

during a Ciesla line scan are actually regions of varying depth within the object, not regions at differing positions requiring movement of either the object or the emitter. The line scan described on page 35 of Ciesla is actually a depth scan through an object such as a tooth, as evidenced in Figure 17 of Ciesla, where the x-axis extends through various depths of the tooth. The line scan of Ciesla is achieved through an adjustment of the delay line via a delay control (*see, e.g.*, Ciesla, fig. 1, ref. no. 19). Thus, in Ciesla, the line scan is a scan through delay times or delay line lengths, and from these, the terahertz radiation that interacts with different depths in the tooth can be detected. Accordingly, Ciesla fails to teach a beam that is scanned across an object, but rather teaches that the measurement of the beam is adjusted by altering the delay line. For at least the same reasons, Ciesla fails to teach any relative movement of the scanned object and the emitter while the line scan is carried out. Therefore, Ciesla fails to teach at least these limitations of claim 1.

Arnone fails to remedy the inadequacies of Ciesla. Arnone is cited in the Office Action as teaching a terahertz imaging device with photoconductive emitter and detectors and raster scanning. Office Action, p. 4. However, Arnone only teaches a system that uses a single detector. Arnone fails to describe a probe array with a plurality of detectors that is scanned across an object.

Therefore, neither Ciesla nor Arnone, individually or combined, teach each limitation of claim 1. Thus, claim 1 is allowable over the combination of Ciesla and Arnone. Claims 2-17, 19-29 and 34 depend from claim 1 and are therefore allowable for at least the same reasons that claim 1 is allowable.

Claim 35 is directed towards an imaging system for examining an object, and is similar to claim 1 except that claim 35 recites that it is the object (instead of the probe array) that is moved “such that a beam of the emitted radiation is scanned across the object, and reflected back to said at least two of the plurality of detectors.” As explained above, neither Ciesla nor Arnone, individually or combined, teach that a beam of terahertz radiation is used to scan across an object or that there is any relative movement of the scanned object and/or the emitter while a scan is carried out. Accordingly, the cited combination fails to render claim 35 unpatentable, and claim 35 is thus

allowable. Claims 36-63 depend from claim 35 and are thus allowable for at least the same reasons that claim 35 is allowable.

Therefore, claims 1-17, 19-29 and 34-63 are allowable. Accordingly, Applicant respectfully requests that the rejection be withdrawn and that the claims be allowed.

In view of the above, Applicants believe the pending application is in condition for allowance. If there are any additional charges in connection with this filing or any subsequent filings (including but not limited to issue fees), the Examiner is respectfully requested and authorized to charge Deposit Account No. 04-1073 therefor under Order No. M0025.0357/P357.

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